DOCUMENT RESUME

ED 313 694 CS 009 898

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TITLE Adult Readers' Sensitivity to Phrase Boundaries in Texts.
PUB DATE Jul 89
NOTE 37p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Directed Reading Activity; Higher Education; *Pattern Recognition; *Reading Ability; Reading Processes; Reading Rate; *Reading Strategies; Young Adults
IDENTIFIERS *Phrasing; Reading Fluency; Text Factors

ABSTRACT

A study examined adult readers' phrasing ability to determine (1) if passage difficulty was a salient variable in readers' sensitivity to phrase boundaries in reading; (2) if phrase sensitivity was an issue of concern for young adult readers; and (3) if difficulties in phrasing were due to an overabundant or an inadequate sensitivity to phrase boundaries in texts. Data were obtained from 60 undergraduate college students, 30 of whom were identified as good readers and 30 of whom were enrolled in a reading skills course, by asking them to identify phrase boundaries in two texts varying in difficulty. Results revealed an interaction between reading ability and text difficulty. In the easier text, both good and poor readers performed at the same level. With the more difficult text, the performance of the poor readers remained at the same level as that of the easier text. Further analysis indicated that errors in phrasing were due more to a relative insensitivity, rather than too great a sensitivity, to phrase boundaries. Continued investigations into the development of readers' phrasing ability appear to be called for. (One figure and five tables of data are included; 27 references are attached.) (KEH)

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ED313694

Adult Readers' Sensitivity to Phrase Boundaries in Texts

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Revised July, 1989

CS009898

Running Head: Phrase Sensitivity

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ABSTRACT

Previous research has suggested that phrasing or chunking texts during reading is an important aspect of fluent reading. Past studies have indicated that good and poor elementary readers differ in their ability to phrase texts. In the present study, good and poor college age readers were asked to identify phrase boundaries in two texts varying in difficulty. Results of the study indicate an interaction between reading ability and text difficulty. In the easier text, both good and poor readers performed at the same level. With the more difficult text, the performance of the poor readers remained at the same level as the easier text. Further analysis indicated that errors in phrasing were due more to a relative insensitivity rather than too great a sensitivity to phrase boundaries. Results of the study are discussed within the framework of word difficulty in the two texts.

Introduction

Investigations on the nature of reading fluency or into reading fluency instruction have not been as forthcoming as studies of other factors involved in reading. Despite the fact that fluency is widely considered critical to the development of skilled reading, there has been little research in recent years in reading fluency. Indeed, Allington (1983) has called reading fluency the "neglected reading goal." The present study is an investigation into one aspect of reading fluency.

Rasinski (1985) has defined reading fluency as those observable surface-level behaviors during reading that are associated with or contribute to variation in comprehension of texts. Behaviors in this category include decoding ability, oral reading with proper use of prosody, and textual phrasing ability.

Reading authorities have argued that the reader's ability to read in chunked or phrase-like textual units is necessary for fluent, proficient reading (Allington, 1984; Aulls, 1979; Clay & Imlach, 1971; Harris & Sipay, 1985; Kleiman, Winograd, & Humphrey, 1979; O'Shea & Sindelar, 1983; Rode, 1974-75; Schreiber, 1980). Similarly, Golinkoff (1975-76) concluded that the good comprehender decodes words rapidly and accurately, and

that the good comprehender "at a minimum...reads in phrase-like units" (p. 653). She cautioned, however, that "the way in which these individual components come together during comprehension, how one influences the other and how deficiency in one affects the others are still not known" (p. 656).

Previous studies of phrasing have investigated the effects of some intervention designed to improve the phrasing ability of students. The subjects were evaluated on a measure of reading proficiency and their aggregate performance was compared against a pre-test measure or against a control group that did not receive the experimental treatment. The experimental treatments usually took one of two forms. One form involved training subjects to read in phrase-like units (Amble, 1966; Amble & Kelly, 1970; Amble & Muehl, 1966). A second type of treatment involved the manipulation of texts (Cromer, 1970; Frase & Swartz, 1979; Gerrell & Mason, 1983; Mason & Kendall, 1979; O'Shea & Sindelar, 1983; Stevens, 1981; Weiss, 1983). In these later studies phrase boundaries were artificially marked or cued in the texts for the subjects. In general, the treatments used in these studies led to significant improvements for the

experimental groups over the control groups.

Missing in this line of research are investigations into the nature of the ability to phrase texts. The research conducted so far has operated, to a large extent, under the tacit assumption that all readers, regardless of any prior abilities in phrasing texts that are read, will benefit from phrase training. These studies have looked for main effects with little regard for pre-existing individual differences in phrasing ability or in differences in phrasing due to text types. What is needed, before work of this type can fruitfully proceed, are studies into the nature of phrasing ability in various types of texts prior to any type of treatment. In other words, the question is, "What is the subject's a priori sensitivity to phrase boundaries in reading texts?"

Two studies have examined this ability. In a study of students' ability to phrase texts under two conditions, Kleiman, Winograd, & Humphrey (1979) found that good fourth-grade readers could approximate more nearly the phrase boundary markings of an adult group on a contrived reading passage than could poor fourth-grade readers. Also, as part of a larger study, Rasinski (1985) investigated the phrasing behavior of

third- and fifth-grader readers. Both groups were asked to identify the phrase boundaries of texts that were at a level of difficulty appropriate to each group. He found that the phrasing behavior of fifth-graders was more closely associated with measures of reading comprehension behavior than with the third-graders. In both cases, however, the students phrased rather difficult texts as measured by readability formulas. Is phrasing ability a function of text difficulty as measured by standard readability formulas? Are problems that some readers may exhibit in phrasing texts apparent across all levels of text difficulty, or are such problems specific to more difficult texts? Thus, the first purpose of the present study is stated in Research Question 1:

Do good and poor readers demonstrate a differential ability to phrase texts of differing levels of difficulty?

A second issue in the area of reading fluency and, its component, phrasing research concerns the tacit assumption that reading fluency is not an important concern for most readers beyond the elementary grades (Carver & Hoffman, 1981). Perusal of the scope and sequence chart for any major basal

reading series indicates an overwhelming shift of instructional emphasis from reading fluency to reading comprehension and study skills in the mid to late elementary grades. The operating assumption is that, after the first few years of reading instruction, most students have achieved a minimal but sufficient level of reading fluency in order to comprehend most reading texts (Carver & Hoffman, 1981). Reading problems in older readers are usually attributed to such factors as poor comprehension strategies, lack of vocabulary knowledge, insufficient prior knowledge, motivational problems, or unfamiliarity with a particular text structure. While acknowledging that these factors do affect fluency, instructional efforts based upon these factors are not directed at improving fluency, per se. Reading fluency, and particularly sensitivity to phrasing, frequently are not given instructional consideration beyond the elementary grades; even though research has demonstrated that older good and poor readers may benefit from training in phrasing texts (Brozo, Schmelzer, & Spires, 1983; Frase & Schwartz, 1979; Stevens, 1981). Thus, the second purpose of the study is related to the phrasing ability of older readers and is stated in Research Question 2:

Are differences in phrasing ability manifested in older good and poor readers?

A third matter to be pursued in the study concerns the nature of the difficulties subjects may have in phrasing texts. Subjects could demonstrate too great a sensitivity to perceived phrase boundaries or they could demonstrate a relative insensitivity to actual phrase boundaries. Thus, Research Question 3 states:

To what extent are subjects' errors in phrasing due to too great or too little a sensitivity to phrase boundaries in texts?

To summarize, the purpose of the present study is threefold: to determine if passage difficulty is a salient variable in readers' sensitivity to phrase boundaries in reading; to determine if phrase sensitivity is an issue of concern for young adult readers; and to determine if difficulties in phrasing are due to an overabundant or an inadequate sensitivity to phrase boundaries in texts. Information gained from this study may help to suggest important text related variables in phrasing and age limits beyond which phrase sensitivity is not a significant variable in reading. The study also may produce insights into the nature of phrasing difficulty. The present study

attempted to investigate these questions by having college students mark phrase boundaries on texts of differing levels of difficulty.

Method

Subjects

Sixty undergraduate college students, ranging from late sophomores to seniors, were randomly selected for the study from two reading-related college courses at an accredited university. Prior to the study, all subjects had taken a required college reading proficiency examination. The test consisted of ten passages, each over 100 words, and 60 comprehension questions which were comprised of vocabulary, literal, inferential, and analysis items. Students were given one hour to complete the examination. A scale score of 61 was required to pass.

Thirty students, enrolled in an undergraduate education course, had passed the reading proficiency test and were identified as good readers. The remaining thirty students had not successfully passed the college reading proficiency test and were enrolled in a reading/study skills course designed for students who were experiencing some difficulty in reading and

studying college level material. They were designated as less proficient readers.

Materials

The materials used in the study were two contemporary narrative passages from the Scott Foresman Signal reading series. The "Still No Answer" text came from the ninth grade edition of the series (Niles, Suhor, & Tuinman, 1977). It contained 1,011 words and had a Flesch readability grade-level estimate of eighth grade. The "Orphan Pup" passages came from the seventh grade text of the same series (Niles & Cohen, 1977). It contained 813 words and its Flesch readability estimate was below seventh grade. Both passages were retyped, with commas deleted in order to maximize the number of unmarked phrase boundaries.

A consensus method based upon Johnson's (1970) technique for phrasing texts and used in several previous studies of phrasing (Gerrell & Mason, 1983; Mason & Kendall, 1979; Taylor, Wade & Yekovich, 1985; Weiss, 1983) was used to determine the target phrase boundaries. Prior to conducting the study, a panel of ten expert readers was asked to complete the same task on both passages. The expert readers were doctoral students in reading education who had previous

professional experience as classroom teachers. The aggregate performance of this panel was used to create a scoring key against which the subjects' performance could be assessed. The criterion for selecting phrase boundaries was more conservative than that used in earlier work. In the previous studies, a 50 percent or better agreement was necessary to establish a required phrase boundary. In the present study, each word boundary that was marked as a phrase boundary by 70 percent or more of the panel of experts was identified as a "required" phrase boundary. Word boundaries marked by 10 percent or less of the panel were identified as "non" phrase boundaries. Word boundaries marked by 20 percent to 60 percent of the expert panel were identified as "optional" phrase boundaries.

Procedure

Fifteen good and fifteen less proficient readers were asked to read and parse the Orphan Pup passage. The remaining subjects were given the same task on the Still No Answer passage. Subjects were instructed to mark with a slash those places in the text that they felt were significant phrase boundaries. This task was similar to the one used by Kleiman, Winograd, and Humphrey (1979) with the exception that, in the present

study, real rather than contrived texts were used. Prior to embarking on the task the subjects were led through a detailed description of the task and completed several example sentences. No time limits were set for completion of the task in order to insure that subjects had sufficient time to read the entire passage.

Individual points were allotted for subjects' performances at each "required" or "non" phrase boundary. Subjects were credited with one point for each time their phrasing behavior at "required" or "non" phrase boundaries matched the scoring key. That is, a subject was credited with one point each time he or she placed a phrase-identifying slash mark at a "required" phrase boundary. Subjects also received one point each time they did not place a slash mark on "non" phrase boundaries. Total possible points were determined by adding all "required" and "non" phrase boundary points. Points were not allotted for phrasing behavior at "optional" phrase boundary points.

Below is a portion of the Still No Answer passage in which the "required" and "optional" phrase boundaries are marked. "Required" phrase boundaries are marked with a double slash, "optional" phrase

boundaries are marked with a single slash, "non" phrase boundaries are unmarked.

We raced down the road//trying to
get away from the light. The thing
remained directly above us/though.
We couldn't get away from it.
Then/there were three beeping sounds//
and the car started to vibrate.

In the above passage, subjects would be credited with one point if they did not put a slash mark between the words "we" and "raced" in the first sentence. Similarly, subjects would be given one point if they did place a slash mark at a "required" phrase boundary, such as between the words "read" and "trying" in the first sentence. No points were allotted at "optional" phrase boundary points. Thus, regardless of whether or not a slash was placed between the words "us" and "above" in the second sentence, no points were awarded.

In order to determine subjects' relative sensitivity to phrase boundaries, their errors were categorized into one of two types. The first type of error was identification of phrase boundaries where none actually existed. This type of error was termed an Inappropriate Hit. A second type of error was

failure to specify phrase boundaries that had been specified by the norming group. In other words, the subjects failed to place a phrase-identifying slash mark where one was actually required. This type of error was termed a Missed Hit.

Results

Subjects' scores were calculated for each passage and converted into percentages so that comparisons could be made between passages. These scores were then transformed into standardized T scores for aid in interpretation. The means and standard deviations are displayed in Table 1.

Insert Table 1 About Here

The independent variables in the study were reading ability and text difficulty. The dependent variable was phrasing score. The data were analyzed using a 2 x 2 (reading ability by test difficulty) randomized analysis of variance. Because of the proportional nature of the scores an arcsin transformation was applied to the percentage scores prior to the analysis of variance. The results of the analysis are shown in Table 2.

Significant main effects were found for both reading ability ($F(1,56)=7.25, p<.01$) and text difficulty ($F(1,56)=11.5, p<.01$) (See Table 2). Tukey follow-up tests indicated that a significant difference ($p<.01$) existed between good and less proficient readers on the more difficult Still No Answer passage. No significant difference was found between reader types for the Orphan Pup passage. Tukey follow-up procedures were also applied to comparisons at the text difficulty level. A significant different ($p<.01$) was found between texts for the less proficient readers. No significant differences on phrasing behavior were found to exist between texts for the good readers.

A significant interaction was also found between proficiency levels and text difficulty ($F(1,56)=4.25, p<.05$). This interaction is graphically portrayed in Figure 1. In this interaction, the good and less proficient readers' phrase identification behavior was at about the same level on the less difficult text. However, for the more difficult text the less proficient readers' performance declined significantly while the good readers' performance remained at nearly the same level as on the easier passage.

Insert Table 2 About Here

Insert Figure 1 About Here

Returning to the research questions posed earlier, it appears that an affirmative answer is provided for Research Question 1: A significant difference does exist in readers' ability to identify boundaries in texts. However, this differential ability was manifested only on a relatively difficult text. On a less difficult text both good and poor readers demonstrated the same level of competence in identifying phrase boundaries. Research Question 2 can also be answered affirmatively. Even among older readers, a differential ability in the fluency-related task of phrasing text was demonstrated.

The third question concerned the nature of the subjects' errors. Were the errors due to a relative insensitivity to phrase boundaries or to an overabundant sensitivity to phrase boundaries.

A predominance of Inappropriate Hits would tend to

indicate an overt sensitivity to phrase boundaries. If subjects were too sensitive to potential phrase boundaries, they would be creating more phrase breaks than were required for productive reading of the text. On the other hand, a predominance of Missed Hits would suggest an insensitivity to phrase boundaries in texts. That is, subjects making Missed Hit errors would maintain a sensitivity to phrase boundaries that was less than ideal for productive reading.

Insert Tables 3 and 4 About Here

The categorization of subjects' errors are displayed on Tables 3 and 4. Both good and poor readers committed both types of errors in non-trivial numbers. However, in terms of raw numbers of errors and errors per type as a percentage of total possible errors of that type, Missed Hits clearly are the predominant type of error. Across all subjects the mean number of Missed Hits was 16.63 while the mean number of Inappropriate Hits was 4.68, nearly a 4 to 1 ratio in favor of the Missed Hits category of errors. The predominance of Missed Hits is true for all subjects on both passages, but is particularly apparent

for poorer readers, and on the more difficult text. On the more difficult text, poorer readers missed nearly half of all required phrase breaks. Thus, on preliminary analysis, it appears that all subjects exhibited a relative insensitivity to phrase boundaries in texts. Moreover, this insensitivity increased with increasing text difficulty and was also related to the reading ability of the subjects.

Discussion

The results of this study indicate that good and poor college readers differ in their ability to identify phrase boundaries in texts. However, this difference is not apparent in all texts. It manifests itself when subjects of differing reading ability are given texts of various levels of difficulty. While the proficient and less proficient readers performed comparably on easier texts, the less proficient readers' ability to identify phrase boundaries dropped in the more difficult texts.

The good readers in this study were fairly proficient in phrasing both texts. This is understandable given the fact that both texts were written at a readability level substantially below college level. The less proficient readers, on the

other hand, were able to phrase the easier Orphan Pup passage at about the same level of proficiency as the good readers. However, the more difficult Still No Answer text caused those readers significant problems. Given the fact that readability estimates are based, to a large extent, on vocabulary load (Chall, 1977), it may be that these readers had reached a point where their less proficient decoding abilities interfered with their ability to phrase texts. Information in Table 5 provides some support for this notion. It appears that the Still No Answer passage has a greater abundance of more difficult words (as determined by word length) than Orphan Pup. On a percentage basis, the Still No Answer passage had over twice as many words of three syllables or more than the Orphan Pup passage. Interestingly, based upon the number of words per sentence, another factor often included in readability formulas, the Orphan Pup passage actually manifested greater syntactic complexity than Still No Answer.

Insert Table 5 About Here

What is the cause of the differential effects in phrasing ability? Rasinski (1985) has suggested that the ability to phrase texts is dependent upon a pre-requisite reading skill - decoding ability. That is, an ability to recognize words is a necessary condition for proficiency in phrasing. The Still No Answer passage appears to present the reader with greater challenge in word decoding. Another common factor in estimates of readability is syntactic complexity. An explanation based on this factor, however, is not suggested, as the Orphan Pup passage manifested longer sentences than the Still No Answer passage.

Further analysis of the data suggested that subjects' errors were due more to an insensitivity to phrase boundaries. All subjects seemed to be less sensitive to phrase boundaries when compared with expert readers. This insensitivity increased with increased text difficulty and lower subject reading ability. One possible explanation for the increased insensitivity (Missed Hits) to phrase boundaries from the easier to more difficult text may lie with word decoding problems. As subjects devoted greater amounts of attention to decoding words in the Still No Answer text, less attention was available for noting phrase

boundaries. Moreover, decoding problems may have disrupted the flow of the reading, resulting in a decreased sensitivity to phrase boundaries. As a result, phrase boundaries were more likely to be passed over. Although not nearly as common as insensitivity errors, subjects did seem, at points, to display sensitivity to phrase boundaries at inappropriate locations.

The percentage phrasing scores for both groups of subjects in both passages were high. Even the less proficient readers' mean phrasing score on the more difficult Still No Answer passage was 96.27% correct in identifying phrase boundaries. This may suggest, on the surface, that all groups fared quite well on the phrasing task. These percentages, however, may be misleading. Most possible phrase boundary points in both texts were obviously not viable phrase boundaries. For example, the blank character space between noun markers (e.g., "the") and nouns (e.g., "article") were considered and counted as possible phrase boundaries. However, it is apparent that few readers, if any, beyond the earliest stages of reading acquisition would consider this an appropriate place for a phrase boundary. Thus, the proliferation of such obviously

inappropriate phrase boundaries in both texts tended to inflate the percentage scores. A more accurate way of portraying actual phrase marking behavior would be to consider total number of errors by subjects. From this perspective, it is apparent that the number of errors committed is not trivial. In the Still No Answer passage the less proficient readers committed an average of 33.4 errors, while the good readers committed an average of 21.3 errors on the same text.

From this perspective, the differences between both groups is quite apparent. However, it is also apparent that even good readers are far from the ideal in their phrasing behavior. It should be recalled that the scoring key was created quite conservatively. A great deal of latitude was given whereby at many points no error was counted whether the subject marked that point as a phrase boundary or not ("optional" phrase boundaries). This may suggest that even good readers, given relatively easy-to-decode texts, are not optimally sensitive to phrase boundaries. Such lack of sensitivity may be one cause of reading difficulties that occur when even proficient readers read sophisticated college-level texts, particularly since such texts tend to be written beyond a ninth-grade

level of difficulty.

Further research is needed in this area. Before more experimental studies involving treatments for improving phrasing ability are conducted, continued investigations into the development of readers' phrasing ability are called for. These studies might consider subjects of various ages, differing reading abilities within grade, and using texts of varying type (narrative vs. expository) as well as difficulty. Some questions that may be posed include: Do learning disabled readers have less sensitivity to phrase boundaries than good readers? At what point in text difficulty does the phrasing performance of students of various reading levels drop off? Are students equally sensitive to phrase boundaries in expository and narrative texts, or to texts for which they have more or less prior knowledge? Are there particular grammatical constructions that cause subjects difficulty in phrasing? How do readers learn to phrase, given that it is currently not a deliberate component of the school reading curriculum?

In conclusion, this exploratory study suggests that phrasing ability appears to be a salient variable in proficient reading for adult as well as younger

readers. Although not widely considered by reading researchers or curriculum developers, the ability to phrase texts has implications for skilled reading. Further research should help uncover the nature of this ability and its relationship to other variables.

References

Allington, R. L. (1984). Oral Reading. In P. D. Pearson (Ed.), Handbook of Reading Research. New York: Longman.

Allington, R. L. (1983). Fluency: The neglected goal. The Reading Teacher, 36, 556-561.

Amble, B. R. (1966). Phrase reading training and the reading achievement of school children. The Reading Teacher, 20, 210-218.

Amble, B. R. & Kelley, F. J. (1970). Phrase reading development training with fourth grade students: An experiment and comparative study. Journal of Reading Behavior, 2, 85-96.

Amble, B. R. & Muehl, S. (1966). Perceptual span training and reading achievement of school children. Journal of Educational Psychology, 57, 192-206.

Aulls, M. W. (1977). The acquisition of reading fluency by skilled and less skilled readers in grades one, two, and three. Paper presented at the annual meeting of the National Reading Conference, New Orleans.

Brozo, W. G., Schmelzer, R. V., & Spires, H. A. (1983). The beneficial effect of chunking on good readers' comprehension of expository prose. Journal of Reading, 26, 442-445.

Carver, R. P. & Hoffman, J. V. (1981). The effect of practice through repeated reading on gain in reading ability using a computer-based instructional system. Reading Research Quarterly, 16, 374-390.

Chall, J. S. (1977). Reading 1967-1977: A Decade of Change and Promise. Bloomington, Indiana: Phi Delta Kappa.

Clay, M. M. & Imlach, R. H. (1971). Juncture, pitch, and stress as reading behavior variables. Journal of Verbal Learning and Verbal Behavior, 10, 133-139.

Cromer, W. (1970). The difference model: A new explanation for some reading difficulties. Journal of Educational Psychology, 61, 471-483.

Frase, L. T. & Schwartz, B. J. (1979). Typographical cues that facilitate comprehension. Journal of Educational Psychology, 71, 197-206.

Gerrell, H. R. & Mason, G. E. (1983). Computer-chunked and traditional text. Reading World, 22, 241-246.

Golinkoff, R. M. (1975-76). A comparison of reading comprehension processes in good and poor comprehenders. Reading Research Quarterly, 11, 623-659.

Harris, A. J. & Sipay, E. R. (1985). How to Increase Reading Ability (Eighth Edition). New York: Longman.

Johnson, R. E. (1970). Recall of prose as a function of the structural importance of the linguistic units. Journal of Verbal Learning and Verbal Behavior, 9, 12-20.

Kleiman, G. M., Winograd, P. N., & Humphrey, M. H. (1979). Prosody and Children's Parsing of Sentences. Technical Report #124. Urbana-Champaign, Illinois: Center for the Study of Reading. (ERIC/RIE, ED 170 733).

Mason, J. M. & Kendall, J. R. (1979). Facilitating reading comprehension through text structure manipulation. Alberta Journal of Educational Research, 25, 68-76.

Niles, O. S. & Cohen, R. (1977). Sense. Glenview, Illinois: Scott, Foresman and Co.

Niles, O. S., Suhor, C., & Tuinman, J. J. (1977). Gallery. Glenview, Illinois: Scott, Foresman and Co.

O'Shea, L. J. & Sindelar, P. T. (1983). The effects of segmenting written discourse on the reading comprehension of low- and high-performance readers. Reading Research Quarterly, 18, 458-465.

Rasinski, T. V. (1985). The Study of Factors Involved in Reader-Text Interactions that Contribute to Fluency in Reading. Unpublished doctoral dissertation. Columbus: The Ohio State University.

Rode, S. A. (1974-75). Development of phrase and clause boundary readings in children. Reading Research Quarterly, 10, 124-142.

Schreiber, P. A. (1980). On the acquisition of reading fluency. Journal of Reading Behavior, 12, 209-224.

Stevens, K. C. (1981). Chunking material as an aid to reading comprehension. Journal of Reading, 25, 126-129.

Taylor, N. E., Wade, M. R., and Yekovich, F. R. (1985). The effects of text manipulation and multiple reading strategies on the reading performance of good and poor readers. Reading Research Quarterly, 20, 566-574.

Weiss, D. S. (1983). The effects of text segmentation on children's reading comprehension. Discourse Processes, 6, 77-89.

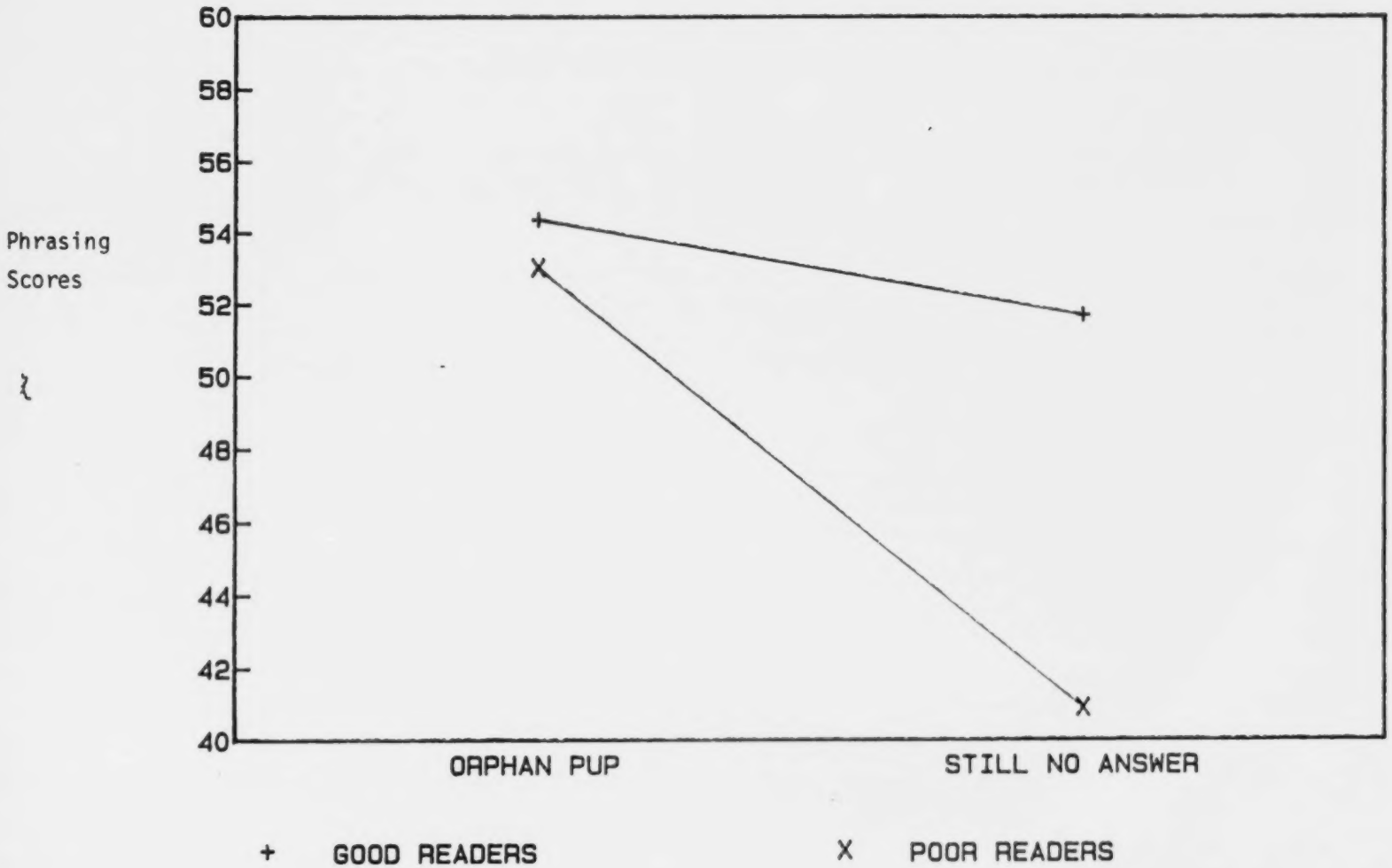

Figure 1
Text Difficulty by Reading Ability Interaction

Table 1

Means and Standard Deviations for Phrasing Performance Scores

	Text	Percentage M	Percentage SD	T-Score M	T-Score SD
Good Readers	Orphan Pup	97.95	.867	54.37	6.96
	Still No...	97.62	1.066	51.70	8.55
Poor Readers	Orphan Pup	97.78	.966	53.02	7.75
	Still No...	96.27	1.352	40.90	10.84

Table 2

Summary of Analysis of Variance for Students' Phrasing Performance with Arcsin Transformation of Scores

Source	DF	MS	F	P
Reading Ability	1	.029	7.250	.009
Text Difficulty	1	.046	11.50	.001
Ability x Text	1	.017	4.250	.041
Error	56	.004		

Table 3

Missed Hits

Reader Ability	Text Difficulty	Mean Total Missed Hits	Missed Hits as Percentage of Total Possible Such Errors
Good	Easy	10.2	22.7
Good	Difficult	18.6	33.8
Poor	Easy	13.2	29.3
Poor	Difficult	24.5	44.6

Table 4

Inappropriate Hits

Reader Level	Text Difficulty	Mean Total Inappropriate Hits	Inappropriate Hits as Percent of Total Possible Such Errors
Good	Easy	4.4	.6
Good	Difficult	2.7	.3
Poor	Easy	2.7	.4
Poor	Difficult	8.9	1.0

Table 5

Words, Syllables and Sentences in the Still No Answer and Orphan Pup Texts

Text	Words	% 3+ Syllable Words	% 4+ Syllable Words	Syllables Per Word	Words Per Sentence
Orphan Pup	813	5.4	1.1	1.28	18.1
Still No...	1011	9.0	2.8	1.42	13.1